

From arc5 at ix.netcom.com Sun May 1 11:35:57 2016
From: arc5 at ix.netcom.com (David Stinson)
Date: Sun, 1 May 2016 10:35:57 -0500
Subject: [BoatAnchors] Smart People: BC-669 Xtal Subber to Class C
Message-ID: <C5EA6B9E90BB48728FF0556407A3911A@DaddyPC>

Still working on the TX Xtal subber for the BC-669.
Moved away from the Class A WA1FFL circuit.
Decided to take advantage of that 0 to 6 Volt square wave from the programmable oscillator.
Removed the coupling cap and ran straight to the transistor base, removed the Collector to Base biasing and now running it sorta Class "C."
Replaced the broadband output transformer with a slug-tuned quarter-inch link-coupled coil that plugs directly into the crystal socket and uses the circuit capacitance to resonant. As the coil is resonated, you can see the 6L6 go from simply amplifying and break into oscillation, locked to the programmable oscillator's output.

Haven't gotten around to changing the Emitter circuit or perhaps replacing the base bias resistor with an RF choke- worried about how much current the programmable oscillator can source and the data sheets aren't very clear on that. Going to feed one into an RF choke and pot and watch on the scope to see "how low can you go" with the resistor before the output of the oscillator starts crashing.
Still some tinkering to do but it's already much better.
<https://goo.gl/photos/k886ZgFYF4vN3uKR8>

A good crystal will result in 5 to 6mA of grid current at the 807 finals, resulting in 150mA of plate current and about 45W out on 3890 KC.

The current iteration of the crystal subber results in between 2.5 and 3mA of grid current, about the same 150mA of plate current and just over 40W out.

Rules of the road: Substitutive changes in the 6L6 oscillator stage are forbidden.

Questions:

Because the average plate currents are nearly identical, can one assume that 3mA is sufficient grid drive and that the crystal just drives the 807s deeper into Class C?

If both methods result in avg 150mA of plate current, is the difference in output due to the duty cycle of

"just in Class C" with the subber verses
"deep in Class C" with a crystal?

I'm going to keep working with this until I get
at least 5mA of PA grid current.
Just got to find the right transistor, I guess.

TNX OM DE Dave AB5S

From wb0eq at yahoo.com Sun May 1 13:29:04 2016
From: wb0eq at yahoo.com (John Sehring)
Date: Sun, 1 May 2016 17:29:04 +0000 (UTC)
Subject: [BoatAnchors] Tube mfr codes
References: <2142738648.5557731.1462123744439.JavaMail.yahoo.ref@mail.yahoo.com>
Message-ID: <2142738648.5557731.1462123744439.JavaMail.yahoo@mail.yahoo.com>

I can't vouch for accuracy, but
<http://stores.ebay.com/Bobs-EZ-Shop/Tube-XREF-Bias-Settings.html>
See 2nd table down.
?--John Sehring ?VE6EQR-WB0EQ??nr Calgary, Alberta, Canada

From gumbear at pacbell.net Sun May 1 15:00:31 2016
From: gumbear at pacbell.net (Arden Allen)
Date: Sun, 1 May 2016 12:00:31 -0700
Subject: [BoatAnchors] Tube mfr codes
In-Reply-To: <2142738648.5557731.1462123744439.JavaMail.yahoo@mail.yahoo.com>
References: <2142738648.5557731.1462123744439.JavaMail.yahoo.ref@mail.yahoo.com>
<2142738648.5557731.1462123744439.JavaMail.yahoo@mail.yahoo.com>
Message-ID: <39CAE88742084452B9E7486809239EFC@Lenovo>

><http://stores.ebay.com/Bobs-EZ-Shop/Tube-XREF-Bias-Settings.html>
See 2nd table down.

The tube currents listed in the bottom table are reasonable values to go by
for tubes in push-pull service. The authoritative source for tube operating
parameters is the tube manufacturer's data sheet which can be obtained from
Frank's Tube Data website: <http://frank.yueksel.org/> Know how to safely
measure tube cathode and plate currents to verify the biasing of the tube is
in the ball park. Cherry red audio output tube plates are the sign of a
tube that is being destroyed. Before installing new tubes check control
grid voltages with the tubes still in their boxes. If it doesn't look
right, it isn't.

Arden Allen
KB6NAX

He who is cruel to animals becomes
hard also in his dealings with men.
We can judge the heart of a man by
his treatment of animals.
?Immanuel Kant

From whitebear1122 at comcast.net Sun May 1 15:55:31 2016
From: whitebear1122 at comcast.net (Whitebear1122)
Date: Sun, 1 May 2016 14:55:31 -0500
Subject: [BoatAnchors] FS: Beautiful HBR-17 Dual Conversion Homemade Receiver
Message-ID: <1651F927-5C9A-488C-A9B9-9C0BF4E8B035@comcast.net>

Hi, I'm selling an HBR-17 dual conversion homemade receiver built by a local physician back in 1962. It is built from the Ted Crosby/Alex Stewart articles in QST magazine from the early 60's. It is basically Ted Crosby's HBR-16 where Alex Stewart wrote a QST article on how to hot rod it by adding the silky smooth Eddystone slide rule dial, a Q-Multiplier, some audio filtering I believe, and a few other circuit changes. Adding the Eddystone dial involved complicated mechanicals where the RF front end was placed on a separate chassis on top of the main chassis so the frequency determining variable capacitors were placed at a physical height to accept the Eddystone. I've read where Ted Crosby was not too happy with this project because it violated his basis tenants of the HBR series, that being the receiver would be simple enough for most hams to build. The HBR-17 and later HBR-13 added another level of mechanical complexity that did didn't really like.

I know the history of this radio because I got it from the original builder about 3 years ago. I have the original invoice from Eddystone dated 1962 when the builder bought the dial from the company in England. The receiver will come with an original letter from Alex Stewart as the builder corresponded with Alex during construction.

The receiver uses National knobs with clean shiny skirts. The receiver come with several rare unobtainium coil sets for 80 meters, 40 meters, 20 meters.

In my opinion the radio is in very clean condition considering its age. There are some scraps and scratches, front panel discolorations. Please check out the photos on photo bucket.com and decide on the condition yourself. I've not had good luck with Apple creating a good hotlink, so if this link doesn't work, please copy and paste into your browser.

<http://s1140.photobucket.com/user/651daisy/library/HBR-17%20Receiver>

[http://s1140.photobucket.com/user/651daisy/library/HBR-17 Receiver](http://s1140.photobucket.com/user/651daisy/library/HBR-17%20Receiver) <<http://s1140.photobucket.com/user/651daisy/library/HBR-17%20Receiver>>

I have a video of this exact receiver on youtube.com. If the hot link doesn't work, then just copy and paste the link into your browser. I was listening to 20 meters at the time. Agreed, my audio recording is awful. Sorry about that. But the video demonstrates the receiver copying cw and SSB.

<https://youtu.be/kqRSI99g1x8>

<https://youtu.be/kqRSI99g1x8> <<https://youtu.be/kqRSI99g1x8>>

While I have seen the occasional HBR-16 and HBR-11, and one or two HBR-14's over the years, I've never seen an HBR-17 before because they were more complicated to build.

Here is a great chance to own a rare HBR series receiver. The radio is being sold as-is.

Asking \$375 plus shipping. Thanks. 73, Scott WA9WFA

From 1oldlens1 at ix.netcom.com Sun May 1 16:31:31 2016
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Sun, 1 May 2016 13:31:31 -0700
Subject: [BoatAnchors] Tube mfr codes
In-Reply-To: <39CAE88742084452B9E7486809239EFC@Lenovo>
References: <2142738648.5557731.1462123744439.JavaMail.yahoo.ref@mail.yahoo.com>
<2142738648.5557731.1462123744439.JavaMail.yahoo@mail.yahoo.com>
<39CAE88742084452B9E7486809239EFC@Lenovo>
Message-ID: <933d5c8f-cc62-a65d-6215-2c1abdc8f75f@ix.netcom.com>

There are several manufacturer's tube handbooks at www.tubebooks.org The tutorial in the front of nearly all RCA tube handbooks is very well written and helpful in understanding how tubes work and how they should be operated.

On 5/1/2016 12:00 PM, Arden Allen via BoatAnchors wrote:

>><http://stores.ebay.com/Bobs-EZ-Shop/Tube-XREF-Bias-Settings.html>
> See 2nd table down.

>

> The tube currents listed in the bottom table are reasonable values to
> go by for tubes in push-pull service. The authoritative source for
> tube operating parameters is the tube manufacturer's data sheet which
> can be obtained from Frank's Tube Data website:
> <http://frank.yueksel.org/> Know how to safely measure tube cathode and
> plate currents to verify the biasing of the tube is in the ball park.

> Cherry red audio output tube plates are the sign of a tube that is
> being destroyed. Before installing new tubes check control grid
> voltages with the tubes still in their boxes. If it doesn't look
> right, it isn't.

>

> Arden Allen

> KB6NAX

>

> He who is cruel to animals becomes

> hard also in his dealings with men.

> We can judge the heart of a man by

> his treatment of animals.

> ?Immanuel Kant

>

>

> -----
> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

--

Richard Knoppow

1oldlens1 at ix.netcom.com

WB6KBL

From wb0eq at yahoo.com Sun May 1 18:37:39 2016

From: wb0eq at yahoo.com (John Sehring)

Date: Sun, 1 May 2016 22:37:39 +0000 (UTC)

Subject: [BoatAnchors] Fw: [DrakeRadio] Tube mfr codes

In-Reply-To: <cb8a45d6-ee62-8fa3-2b62-19eedd585b84@ix.netcom.com>

References: <cb8a45d6-ee62-8fa3-2b62-19eedd585b84@ix.netcom.com>

Message-ID: <1042830356.5664825.1462142259650.JavaMail.yahoo@mail.yahoo.com>

I'm not presently at home so can't ck on this.

Am guessing might be more prevalent on octal based tubes.--John Sehring ?VE6EQR-WB0EQ??nr Calgary, Alberta, Canada

On Sunday, May 1, 2016 12:08 PM, Richard Knoppow <1oldlens1 at ix.netcom.com> wrote:

?? This is an interesting chart but I wonder where the numbers are printed on the tubes.? I just looked at a bunch of RCA miniatures and could not find numbers on any. Might be worn off but I looked at a bunch and think at least one would have the numbers.

On 5/1/2016 10:29 AM, John Sehring wb0eq at yahoo.com [DrakeRadio] wrote:

```
#yiv0677363368 #yiv0677363368 -- #yiv0677363368 .yiv0677363368ygrp-photo-
title{clear:both;font-size:smaller;height:15px;overflow:hidden;text-
align:center;width:75px;}#yiv0677363368 div.yiv0677363368ygrp-photo{background-
position:center;background-repeat:no-repeat;background-color:white;border:1px
solid black;height:62px;width:62px;}#yiv0677363368 div.yiv0677363368photo-title a,
#yiv0677363368 div.yiv0677363368photo-title a:active, #yiv0677363368
div.yiv0677363368photo-title a:hover, #yiv0677363368 div.yiv0677363368photo-title
a:visited {text-decoration:none;}#yiv0677363368 div.yiv0677363368attach-table
div.yiv0677363368attach-row {clear:both;}#yiv0677363368 div.yiv0677363368attach-
table div.yiv0677363368attach-row div {float:left;}#yiv0677363368 p
{clear:both;padding:15px 0 3px 0;overflow:hidden;}#yiv0677363368
div.yiv0677363368ygrp-file {width:30px;}#yiv0677363368 div.yiv0677363368attach-
table div.yiv0677363368attach-row div div a {text-decoration:none;}#yiv0677363368
div.yiv0677363368attach-table div.yiv0677363368attach-row div div span {font-
weight:normal;}#yiv0677363368 div.yiv0677363368ygrp-file-title {font-weight:bold;}
#yiv0677363368 #yiv0677363368
```

I can't vouch for accuracy, but

<http://stores.ebay.com/Bobs-EZ-Shop/Tube-XREF-Bias-Settings.html>

See 2nd table down.

? --John Sehring ?VE6EQR-WB0EQ??nr Calgary, Alberta, Canada

---.,_.--- Posted by: John Sehring <wb0eq at yahoo.com>

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--

Richard Knoppow

1oldlens1 at ix.netcom.com

WB6KBL

From wb0eq at yahoo.com Sun May 1 18:44:39 2016

From: wb0eq at yahoo.com (John Sehring)

Date: Sun, 1 May 2016 22:44:39 +0000 (UTC)

Subject: [BoatAnchors] <http://frank.yueksel.org/sheets65.html>

References: <918233087.5679902.1462142679544.JavaMail.yahoo.ref@mail.yahoo.com>

Message-ID: <918233087.5679902.1462142679544.JavaMail.yahoo@mail.yahoo.com>

What a beautiful labor of love.? Sorry I can't take it.?--John Sehring ?VE6EQR-

WB0EQ??nr Calgary, Alberta, Canada

From gumbear at pacbell.net Sun May 1 19:52:50 2016
From: gumbear at pacbell.net (Arden Allen)
Date: Sun, 1 May 2016 16:52:50 -0700
Subject: [BoatAnchors] Smart People: BC-669 Xtal Subber to Class C
In-Reply-To: <C5EA6B9E90BB48728FF0556407A3911A@DaddyPC>
References: <C5EA6B9E90BB48728FF0556407A3911A@DaddyPC>
Message-ID: <8CA75CA75FCD406B98B55ED89D41D2FB@Lenovo>

>Still working on the TX Xtal subber for the BC-669.

Dave. may I suggest to get better drive to your power output transistor add in line a video line driver IC.

Arden Allen
KB6NAX

He who is cruel to animals becomes
hard also in his dealings with men.
We can judge the heart of a man by
his treatment of animals.
?Immanuel Kant

From zengmeiste at aol.com Thu May 5 15:02:18 2016
From: zengmeiste at aol.com (Jammer)
Date: Thu, 5 May 2016 15:02:18 -0400
Subject: [BoatAnchors] RCA miniatures _ OT request
In-Reply-To: <mailman.24.1462142283.226.boatanchors@theporch.com>
References: <mailman.24.1462142283.226.boatanchors@theporch.com>
Message-ID: <154824c98c5-64d5-1acd@webprd-m17.mail.aol.com>

>> ?? This is an interesting chart but I wonder where the numbers are printed on the tubes.? I just looked at a bunch of >> RCA miniatures and could not find numbers on any. Might be worn off but I looked at a bunch and think at least one >> would have the numbers.

Oh, they're there; you might try a little hot breath to bring out the markings. Sometimes a soft 'lead' pencil rubbed across them works -- I believe these were etched..? (anyone verify?).

OT request: I have a (plethora?) of musgoes but little time to post here or get to a fest;
I'm hoping y'all might know someone trustworthy(?) in / near Chicago who sells on that e-place.

Thanks and 73 de KC9KEL Terry B (kc9kel at gmail.com)

From wlfuqu00 at uky.edu Fri May 6 16:05:39 2016
From: wlfuqu00 at uky.edu (Fuqua, Bill L)
Date: Fri, 6 May 2016 20:05:39 +0000
Subject: [BoatAnchors] FW: [ARC5] Dayton
In-Reply-To: <B7E8B5B4A202074084E2515A7B10A7F34F3C6E3E@ex10mb02.ad.uky.edu>
References: <5724FD31.8090406@comcast.net>,
<B7E8B5B4A202074084E2515A7B10A7F34F3C0FC2@ex10mb02.ad.uky.edu>,
<B7E8B5B4A202074084E2515A7B10A7F34F3C10FE@ex10mb02.ad.uky.edu>,
<B7E8B5B4A202074084E2515A7B10A7F34F3C6A52@ex10mb02.ad.uky.edu>,
<B7E8B5B4A202074084E2515A7B10A7F34F3C6E3E@ex10mb02.ad.uky.edu>
Message-ID: <B7E8B5B4A202074084E2515A7B10A7F34F3C6E58@ex10mb02.ad.uky.edu>

Also,
If you wish you can list a frequency you may monitor, but mind you, it is a RF
jungle there.
73
Bill wa4lav

From: Fuqua, Bill L
Sent: Friday, May 06, 2016 1:54 AM
To: ARC5 at mailman.qth.net
Subject: RE: [ARC5] Dayton

Ok, I will start a list for who ever is interested.
Please reply directly.
I need following info.
I shall resend only to those that reply with info, other list such as boat anchor,
test-equipment, tektronix , HP etc are invited to join in. I don't have access to
all of them
Call sign, Name , interest , what you are
looking for, what you are selling or trading, contact info
(cell, space #) etc.

From: Fuqua, Bill L
Sent: Sunday, May 01, 2016 2:50 PM

To: Peter; ARC5 at mailman.qth.net
Subject: RE: [ARC5] Dayton

I used to make a list of folks attending Dayton and contact info such as space number, or frequency to monitor or cell phone number many years ago. I would also be nice to list the items for sale or looking for.

At the time I was on boat anchor and amps list. Anyone interested in compiling such as list?

I may consider it but very busy between now and Dayton.

73

Bill wa4lav

From: ARC5 [arc5-bounces at mailman.qth.net] on behalf of Fuqua, Bill L [wlfuqu00 at uky.edu]

Sent: Sunday, May 01, 2016 1:35 AM

To: Peter; ARC5 at mailman.qth.net

Subject: Re: [ARC5] Dayton

I will be there but probably no ARC5 stuff.
My space is at 2905 in the outside flea market.
Not quite sure what I will be bringing.

73

Bill wa4lav

From: ARC5 [arc5-bounces at mailman.qth.net] on behalf of Peter [k.malsch at comcast.net]

Sent: Saturday, April 30, 2016 2:45 PM

To: ARC5 at mailman.qth.net

Subject: [ARC5] Dayton

Good Morning,

I was just wondering, who of you is going to the Dayton Hamfest. I will and would like to meet with you. We could arrange for a place to meet.

Peter
KC0DGM

ARC5 mailing list

Home: <http://mailman.qth.net/mailman/listinfo/arc5>

Help: <http://mailman.qth.net/mmfaq.htm>

Post: <mailto:ARC5 at mailman.qth.net>

This list hosted by: <http://www.qsl.net>

Please help support this email list: <http://www.qsl.net/donate.html>

ARC5 mailing list

Home: <http://mailman.qth.net/mailman/listinfo/arc5>

Help: <http://mailman.qth.net/mmfaq.htm>

Post: [mailto:ARC5 at mailman.qth.net](mailto:ARC5@mailman.qth.net)

This list hosted by: <http://www.qsl.net>

Please help support this email list: <http://www.qsl.net/donate.html>

From ranickel at comcast.net Sat May 7 10:46:43 2016

From: ranickel at comcast.net (Robert Nickels)

Date: Sat, 7 May 2016 09:46:43 -0500

Subject: [BoatAnchors] Bound catalogs

Message-ID: <572DFFD3.7070808@comcast.net>

I picked up another bound hardcover copy of an Allied Radio catalog at an antique mall yesterday - the 1959 edition. The hard covers protect the original color cover and pages so they are in perfect condition, but it got me to wondering what the story on these is. Were the hardcover versions provided only to special (i.e. big) customers, or what - does anyone know?

73, Bob W9RAN

From wlfuqu00 at uky.edu Sun May 8 02:22:07 2016

From: wlfuqu00 at uky.edu (Fuqua, Bill L)

Date: Sun, 8 May 2016 06:22:07 +0000

Subject: [BoatAnchors] Dayton Hamvention Contact information

Message-ID: <B7E8B5B4A202074084E2515A7B10A7F34F3C70DD@ex10mb02.ad.uky.edu>

I am compiling a list of those going to the Dayton Hamvention and their contact information.

The list will only go to those who e-mail me directly and will not be sent via bulk mail.

I did this a long time ago for Boatanchor subscribers but have not done it for some years.

Please provide the following.

Name

Call

Particular interest or what you are looking for

What you may be selling or trading

Contact info, at least one of the following:

Flea market space

cell phone number

email address

frequency you may monitor, mind you, it is a RF jungle there.

I will send the compiled list Wednesday before the Hamvention so that folks will not jump the gun and annoy you in the meantime.

If you have any suggestions please let me know. Also, when I send it all email addresses will be BCC: so that they will not be visible.

73

Bill wa4lav

From arc5 at ix.netcom.com Mon May 9 08:19:40 2016
From: arc5 at ix.netcom.com (David Stinson)
Date: Mon, 9 May 2016 07:19:40 -0500
Subject: [BoatAnchors] BC-669 Project: Xtal Subber Update
Message-ID: <BCBAEDB3A2C948879461FDD43292DA3F@DaddyPC>

Still working on a herd of BC-669s.
One of the issues is the need for crystals for the six pre-set channels. While usable crystals from good suppliers like AF4K are always preferable, most of the frequencies I need are either unaffordable custom-made (\$45 each for International to make them for you and you need 12), the freqs needed are not available or are not a useable crystal type.

Those tiny little xtals so common today will die a quick and tragic death in the 6L6 transmit oscillator but they will work OK on the receiver side's 6J5 oscillator. So as with earlier projects, I'm working with Programmable Oscillators which can be ordered from Digikey for any frequency from 1-125 MC in 100-cycle steps for a whopping \$4 each.

Receiver Xtal Subber.

This simple circuit will drive the receiver side very well. It works with most types of oscillators which have a tuned-circuit in their plate circuits, i.e. the 1625 oscillator-multiplier in the ARC-5 VHF transmitter and also in the ARC-5 VHF receiver. I've heard the objections about "jitter" and "noise" etc. Used them in several projects and these have not been an issue. Here is the circuit:

<https://goo.gl/photos/8pEso7ra9sp26msz6>
<https://goo.gl/photos/prgaQMniksRHVqq16>

The .004 caps are for DC blocking. I used them because I had them on hand, .01 is too big

and .001 is too small. Physically smaller caps rated 50V or more should work fine.

The little 4:1 UNUN came from a local surplus house (shout out to Jim at Tanner Electronics in Carrollton); he's got a zillion of them for about 25 cents each.

The IF of the BC-669 receiver is 385 KC. While the manual specifies IF+385 for channels 1-5 and IF-385 for channel 6, I've found either formula works as long as the oscillator frequency falls below 4.4 MC. I selected oscillator frequencies outside the 80 meter band to avoid the need to switch the oscillators on and off. Examples:

RX Channel Freq	RX Oscillator Freq.
3890	3505, 4275
3885	3500, 4270
3880	3495, 4265
3870	3485, 4255
3547	3162, 3932
1885	1500, 2270

Transmitter Xtal Subber.

This is still a "work in progress."

Here's the original TX oscillator, mislabeled as the heterodyne osc. in the manual:

<https://goo.gl/photos/ZknAK2d9KJLQD57B7>

A strong crystal will drive the 807s to 6 mA of grid current. This circuit will deliver 2.5-3 mA, but that seems to be enough to drive the PA to within 10% of full output.

I began the project with a circuit derived from WA6FWL's VFO buffer published in QST.

I've moved-away from the Class A amplifier to a Class-C and replaced the broadband transformer on the output with a slug-tuned coil also from Tanner. It's about 60 turns on a quater-inch form about 3/4 of an inch long. Tune the slug until the 6L6 stage breaks into oscillation and peak drive to the PA. The Prog. Oscillator locks the oscillations to the desired frequency.

Need to find a stouter transistor and work on the coupling to the 6L6 Oscillator.

Photo of the transmitter oscillator flanked by two receiver versions and one original crystal:

<https://goo.gl/photos/PiXAUBALiCnvnvQb9>
<https://goo.gl/photos/gkWYm9YD1dgX4YsA7>

Current prototype diagram:

<https://goo.gl/photos/zuiPq2VZfvS2Gp61A>

Power

Power is supplied to all boards by a cute little DC-DC buck converter mounted on the transmit board.

Size of a postage stamp.

They take the unregulated 12 VDC derived from the filament string and produce clean 5 VDC. It can source up to 3 Amps. Available on Ebay for the big price of 75 CENTS each. Crystal mount plate glued to the top of the converter's inductor deletes birdies in my application. Buy 10 of these little beauties for \$7.

<http://www.ebay.com/itm/162064959588>

Grateful thanks to Nick Broline, Arden Allen, Mike Hanz and others for help and encouragement.

73 DE Dave AB5S

From wb0eq at yahoo.com Fri May 13 14:20:03 2016

From: wb0eq at yahoo.com (John Sehring)

Date: Fri, 13 May 2016 18:20:03 +0000 (UTC)

Subject: [BoatAnchors] VTVM tutorial

References: <158208324.1925875.1463163603937.JavaMail.yahoo.ref@mail.yahoo.com>

Message-ID: <158208324.1925875.1463163603937.JavaMail.yahoo@mail.yahoo.com>

I found a useful tutorial on VTVM design and use.? Is of just post-WWII vintage.

Go to:?

www.cfp-radio.com/documentations/Sylvania-VTVM.pdf
for download of it.

Schematic of VTVM described is at:

http://www.one-electron.com/FC_TestEquipment.html

and click on "Sylvania 221Z VTVM schematic".

This VTVM seems way over-complex, way too many tubes!? (Never I thought I'd ever

say that!)? Most VTVMs have two tubes.
?--John Sehring ?VE6EQR-WB0EQ??nr Calgary, Alberta, Canada

From w7qho at aol.com Fri May 13 14:48:59 2016
From: w7qho at aol.com (Dennis DuValll)
Date: Fri, 13 May 2016 11:48:59 -0700
Subject: [BoatAnchors] Johnson Desk Power Transformer For Sale
Message-ID: <8115E3B5-7EB6-4A72-85BB-81EAC473867D@aol.com>

Amongst my holdings discovered that I have the big plate power transformer for a Johnson Desk KW. Somebody gotta be looking for one of these.
Contact me for more if interested.

Dennis D. W7QH0
Glendale, CA

From wb3fau55 at neo.rr.com Fri May 13 16:38:09 2016
From: wb3fau55 at neo.rr.com (wb3fau55 at neo.rr.com)
Date: Fri, 13 May 2016 16:38:09 -0400
Subject: [BoatAnchors] VTVM tutorial
In-Reply-To: <158208324.1925875.1463163603937.JavaMail.yahoo@mail.yahoo.com>
Message-ID: <20160513203809.8LOU2.17054.root@cdptpa-web14>

Get over it, buy a Fluke...Russ.
---- John Sehring via BoatAnchors <boatanchors at theporch.com> wrote:
> I found a useful tutorial on VTVM design and use.? Is of just post-WWII vintage.

Go to:?

www.cfp-radio.com/documentations/Sylvania-VTVM.pdf
for download of it.
Schematic of VTVM described is at:
http://www.one-electron.com/FC_TestEquipment.html

and click on "Sylvania 221Z VTVM schematic".

This VTVM seems way over-complex, way too many tubes!? (Never I thought I'd ever say that!)? Most VTVMs have two tubes.
?--John Sehring ?VE6EQR-WB0EQ??nr Calgary, Alberta, Canada

BoatAnchors mailing list
BoatAnchors at theporch.com
<https://minime.theporch.com/mailman/listinfo/boatanchors>

From arc5 at ix.netcom.com Fri May 13 17:48:33 2016
From: arc5 at ix.netcom.com (=?utf-8?B?YXJjNUBpeC5uZXRjb20uY29t?=
Date: Fri, 13 May 2016 21:48:33 GMT
Subject: [BoatAnchors] VTVM tutorial
Message-ID: <000f4242.210ea20e5c0c0057@ix.netcom.com>

I thought a fluke was something bad in your liver....
Sent from my ain't-so-smartphone.

----- Original message-----From: Russ DworakowskiGet over it, buy a Fluke...

From spr at earthlink.net Fri May 13 21:46:53 2016
From: spr at earthlink.net (Scott Robinson)
Date: Fri, 13 May 2016 18:46:53 -0700
Subject: [BoatAnchors] VTVM tutorial
In-Reply-To: <20160513203809.8LOU2.17054.root@cdptpa-web14>
References: <20160513203809.8LOU2.17054.root@cdptpa-web14>
Message-ID: <4f84d7e2-9d70-629c-461c-4e3895995db5@earthlink.net>

Ah yes, a Fluke: We at the California Historical Radio Society have an original Fluke. It's a largish box with a zero center analog meter with a set of decimal switches that the operator sets for meter zero. The switch settings then tell you the voltage with considerable precision. It's a DVM, but the operator is the Analog to Digital converter.

I personally own a 20 year old Fluke model 87; it's great!

Peace,

Scott Robinson
VP, CHRS

I remember these things being in use in the '70s.

On 5/13/16 1:38 PM, Russ Dworakowski WB3FAU via BoatAnchors wrote:

> Get over it, buy a Fluke...Russ.

> ---- John Sehring via BoatAnchors <boatanchors at theporch.com> wrote:

>> I found a useful tutorial on VTVM design and use. Is of just post-WWII vintage.

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> Go to:

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> and click on "Sylvania 221Z VTVM schematic".

>

> This VTVM seems way over-complex, way too many tubes! (Never I thought I'd ever say that!) Most VTVMs have two tubes.

> --John Sehring VE6EQR-WB0EQ nr Calgary, Alberta, Canada

>

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> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

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> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

>

From 1oldlens1 at ix.netcom.com Fri May 13 22:35:54 2016

From: 1oldlens1 at ix.netcom.com (Richard Knoppow)

Date: Fri, 13 May 2016 19:35:54 -0700

Subject: [BoatAnchors] VTVM tutorial

In-Reply-To: <4f84d7e2-9d70-629c-461c-4e3895995db5@earthlink.net>

References: <20160513203809.8L0U2.17054.root@cdptpa-web14>

<4f84d7e2-9d70-629c-461c-4e3895995db5@earthlink.net>

Message-ID: <f34869c3-a383-ea80-2777-065b72c797bf@ix.netcom.com>

I am not sure about the old Fluke but is it not a potentiometer type voltmeter? This has the advantage of infinite input resistance at balance.

The first DVM I dealt with was a NLS meter with the stack of engraved plastic number plates and step by step telephone type relays inside. We set one up on an automatic bridge at the resistor factory I worked for. It recorded measurements on a modified IBM model B typewriter. A very noisy arrangement but it worked.

I have a TEK DMM, similar to the Fluke instruments, works very well.

On 5/13/2016 6:46 PM, Scott Robinson via BoatAnchors wrote:

> Ah yes, a Fluke: We at the California Historical Radio Society have an
> original Fluke. It's a largish box with a zero center analog meter
> with a set of decimal switches that the operator sets for meter zero.
> The switch settings then tell you the voltage with considerable
> precision. It's a DVM, but the operator is the Analog to Digital
> converter.

>

> I personally own a 20 year old Fluke model 87; it's great!

>

> Peace,

>

> Scott Robinson

> VP, CHRS

>

> I remember these things being in use in the '70s.

>

> On 5/13/16 1:38 PM, Russ Dworakowski WB3FAU via BoatAnchors wrote:

>> Get over it, buy a Fluke...Russ.

>> ---- John Sehring via BoatAnchors <boatanchors at theporch.com> wrote:

>>> I found a useful tutorial on VTVM design and use. Is of just
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>> thought I'd ever say that!) Most VTVMs have two tubes.

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>>

> -----
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> <https://minime.theporch.com/mailman/listinfo/boatanchors>
>

--

Richard Knoppow
1oldlens1 at ix.netcom.com
WB6KBL

From spr at earthlink.net Fri May 13 23:28:39 2016
From: spr at earthlink.net (Scott Robinson)
Date: Fri, 13 May 2016 20:28:39 -0700
Subject: [BoatAnchors] VTVM tutorial
In-Reply-To: <f34869c3-a383-ea80-2777-065b72c797bf@ix.netcom.com>
References: <20160513203809.8LOU2.17054.root@cdptpa-web14>
<4f84d7e2-9d70-629c-461c-4e3895995db5@earthlink.net>
<f34869c3-a383-ea80-2777-065b72c797bf@ix.netcom.com>
Message-ID: <b06ea659-78c1-bb8e-9bd2-64f3ea7e722b@earthlink.net>

Hi Richard,

Yes, I think it is a potentiometer type of voltmeter. And even manually operated, the switches make some noise.

Peace,

Scott

On 5/13/16 7:35 PM, Richard Knoppow via BoatAnchors wrote:

> I am not sure about the old Fluke but is it not a potentiometer type
> voltmeter? This has the advantage of infinite input resistance at balance.
> The first DVM I dealt with was a NLS meter with the stack of engraved
> plastic number plates and step by step telephone type relays inside. We
> set one up on an automatic bridge at the resistor factory I worked for.
> It recorded measurements on a modified IBM model B typewriter. A very
> noisy arrangement but it worked.
> I have a TEK DMM, similar to the Fluke instruments, works very well.

>

> On 5/13/2016 6:46 PM, Scott Robinson via BoatAnchors wrote:

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>> original Fluke. It's a largish box with a zero center analog meter
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>> precision. It's a DVM, but the operator is the Analog to Digital

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>> converter.
>>
>> I personally own a 20 year old Fluke model 87; it's great!
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>> Peace,
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>> Scott Robinson
>> VP, CHRS
>>
>> I remember these things being in use in the '70s.
>>
>> On 5/13/16 1:38 PM, Russ Dworakowski WB3FAU via BoatAnchors wrote:
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>>>
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>>> --John Sehring VE6EQR-WB0EQ nr Calgary, Alberta, Canada
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>> https://minime.theporch.com/mailman/listinfo/boatanchors
>>
>
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From cbmcgr at gmail.com Sat May 14 02:07:54 2016
From: cbmcgr at gmail.com (Chuck McGregor)
Date: Fri, 13 May 2016 23:07:54 -0700
Subject: [BoatAnchors] VTVM tutorial
In-Reply-To: <b06ea659-78c1-bb8e-9bd2-64f3ea7e722b@earthlink.net>
References: <20160513203809.8LOU2.17054.root@cdptpa-web14>
<4f84d7e2-9d70-629c-461c-4e3895995db5@earthlink.net>
<f34869c3-a383-ea80-2777-065b72c797bf@ix.netcom.com>
<b06ea659-78c1-bb8e-9bd2-64f3ea7e722b@earthlink.net>
Message-ID: <CAFTq00Q1W7Mai-PS8qB8kH=W1wHREKEQ49X3_5b_k6vj8RMJKQ@mail.gmail.com>

Scott-

As I remember, the fluke meters had both a "conventional" VTVM setting to establish a first approximation, then followed with a potentiometer mode to make a really precise, infinite impedance measurement. I think the early ones, at least, had a liquid Weston cell reference built in. I think later units had an option for a solid state temperature compensated reference. We were privileged to have Fluke equipment available at the U of Washington EE department back in the '60's. Several of our faculty consulted for Fluke, and John Fluke, JR was among our students.

-Chuck

On Fri, May 13, 2016 at 8:28 PM, Scott Robinson via BoatAnchors <boatanchors at theporch.com> wrote:

> Hi Richard,
>
> Yes, I think it is a potentiometer type of voltmeter. And even manually
> operated, the switches make some noise.
>
> Peace,
>
> Scott
>
> On 5/13/16 7:35 PM, Richard Knoppow via BoatAnchors wrote:
>
>> I am not sure about the old Fluke but is it not a potentiometer type
>> voltmeter? This has the advantage of infinite input resistance at
>> balance.
>> The first DVM I dealt with was a NLS meter with the stack of engraved
>> plastic number plates and step by step telephone type relays inside. We
>> set one up on an automatic bridge at the resistor factory I worked for.
>> It recorded measurements on a modified IBM model B typewriter. A very
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>>
>> On 5/13/2016 6:46 PM, Scott Robinson via BoatAnchors wrote:

```

>>
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>>> with a set of decimal switches that the operator sets for meter zero.
>>> The switch settings then tell you the voltage with considerable
>>> precision. It's a DVM, but the operator is the Analog to Digital
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>>> I personally own a 20 year old Fluke model 87; it's great!
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>>> On 5/13/16 1:38 PM, Russ Dworakowski WB3FAU via BoatAnchors wrote:
>>>
>>>> Get over it, buy a Fluke...Russ.
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> BoatAnchors mailing list
> BoatAnchors at theporch.com
> https://minime.theporch.com/mailman/listinfo/boatanchors
>
```

From vilgotch at bigpond.net.au Sat May 14 08:02:07 2016
From: vilgotch at bigpond.net.au (Morris Odell)
Date: Sat, 14 May 2016 22:02:07 +1000
Subject: [BoatAnchors] VTVM tutorial
In-Reply-To: <f34869c3-a383-ea80-2777-065b72c797bf@ix.netcom.com>
References: <20160513203809.8L0U2.17054.root@cdptpa-web14>
<4f84d7e2-9d70-629c-461c-4e3895995db5@earthlink.net>
<f34869c3-a383-ea80-2777-065b72c797bf@ix.netcom.com>
Message-ID: <001201d1add8\$76908920\$63b19b60\$@bigpond.net.au>

I still have one of those:

https://www.youtube.com/watch?v=Kl_ObCnaclY

No tubes, but it's heavy and does need a grease and oil change occasionally
- that must qualify it as a boatanchor.

73, Morris

Richard Knoppow wrote:

I am not sure about the old Fluke but is it not a potentiometer type
voltmeter? This has the advantage of infinite input resistance at balance.
The first DVM I dealt with was a NLS meter with the stack of engraved
plastic number plates and step by step telephone type relays inside

From 4cx250b at miamioh.edu Sun May 15 08:06:11 2016
From: 4cx250b at miamioh.edu (Jim Garland)
Date: Sun, 15 May 2016 06:06:11 -0600
Subject: [BoatAnchors] Hallicrafters FPM-200 owners list
Message-ID: <04cd01d1aea2\$2c33c3e0\$849b4ba0\$miamioh.edu>

Hi Gang,

Once a year I update my Hallicrafters FPM-200 owners' list. If you own one of these radios, check out the list and let me know if your information is included and if I need to update any of it. Here's the link:

http://www.w8zr.net/vintage/tcvrs/FPM200_list.htm

I had a service issue this year with my FPM-200. The T/R relay failed because of a broken phosphor-bronze spring return, which I had to rebuild from a piece of finger stock. Every time I tear into the radio I'm amazed by how technologically advanced it was for its age. My radio was built in 1958 and was the grand prize in a Why-I-Like-Hallicrafters contest. I bought it from the winner, who never used it. It came with the telegram from Wm Halligan jr notifying him of the prize, along with photos of it being awarded at the 1959 Dayton Hamvention.

Thanks and 73,

Jim W8ZR

From 4cx250b at miamioh.edu Sun May 15 09:34:13 2016
From: 4cx250b at miamioh.edu (Jim Garland)
Date: Sun, 15 May 2016 07:34:13 -0600
Subject: [BoatAnchors] Multi-Elmac 1470 power supply info needed
Message-ID: <052a01d1aeae\$789d1cc0\$69d75640\$miamioh.edu>

Anyone got schematic diagram of the Multi-Elmac 1470 115VAC/12VDC power supply? This is an unusual power supply that's paired with the AF67/AF68 transmitter, and seems quite different from the common M-E 1070 power supply. One difference is that it has two vibrators and two identical power transformers.

Tnx and 73,

Jim W8ZR

From spr at earthlink.net Mon May 16 09:51:08 2016
From: spr at earthlink.net (Scott Robinson)
Date: Mon, 16 May 2016 06:51:08 -0700

Subject: [BoatAnchors] Part needed for Lafayette KT-200/HE-10/Trio 9R4J
Message-ID: <62c9dbb1-b2b8-2bd9-45da-baf0838f61ea@earthlink.net>

Folks,

The BC band antenna coil on mine has an open primary. Before I go more nuts than I already am doing microsurgery on a honeycomb winding, I thought I'd ask if anyone was parting out one of these. It's a pretty nice receiver, and I'd like to have it 100% right.

Thanks,

Scott Robinson

From wb0eq at yahoo.com Tue May 17 10:00:25 2016
From: wb0eq at yahoo.com (John Sehring)
Date: Tue, 17 May 2016 14:00:25 +0000 (UTC)
Subject: [BoatAnchors] Balancing Tubes
References: <464866878.3925759.1463493625960.JavaMail.yahoo.ref@mail.yahoo.com>
Message-ID: <464866878.3925759.1463493625960.JavaMail.yahoo@mail.yahoo.com>

The topic of balancing tubes comes & goes on our list.
Here's a what I believe a reasonable take on the subject but is slanted toward audio use:

<http://tubesound.com/2010/10/27/tube-matching-with-a-tube-tester/>

Scroll thru the other articles as well (their links are shown at the bottom of each article).?

--John Sehring ?VE6EQR-WB0EQ??nr Calgary, Alberta, Canada

From wlfuqu00 at uky.edu Tue May 17 12:45:30 2016
From: wlfuqu00 at uky.edu (Fuqua, Bill L)
Date: Tue, 17 May 2016 16:45:30 +0000
Subject: [BoatAnchors] Dayton Hamvention Contact information
Message-ID: <B7E8B5B4A202074084E2515A7B10A7F34F3C97BC@ex10mb02.ad.uky.edu>

I have not received many responses to join the contact list.
I could be that somehow I had missed your emails. Make sure you have in the subject line

?Dayton Hamvention Contact information?

Those of you on the list should have already received an email from me and need not respond unless you have an update to your information.

I also have included another mailing list.

Here is the original email:

I am compiling a list of those going to the Dayton Hamvention and their contact information.

The list will only go to those who e-mail me directly and will not be sent via bulk mail.

I did this a long time ago for Boatanchor subscribers but have not done it for some years.

Please provide the following.

Name

Call

Particular interest or what you are looking for

What you may be selling or trading

Contact info, at least one of the following:

Flea market space

cell phone number

email address

frequency you may monitor, mind you, it is a RF jungle there.

I will send the compiled list Wednesday before the Hamvention so that folks will not jump the gun and annoy your in the meantime.

If you have any suggestions please let me know. Also, when I send it all email addresses will be BCC: so that they will not be visible.

73

Bill wa4lav

From arc5 at ix.netcom.com Wed May 18 23:49:37 2016
From: arc5 at ix.netcom.com (David Stinson)
Date: Wed, 18 May 2016 22:49:37 -0500
Subject: [BoatAnchors] BC-669 Almost Ready to Go Home
Message-ID: <19486990045B45718A5018AA49B8BDC8@DaddyPC>

The rig.

<https://goo.gl/photos/vayQAQQNjzutvsJB9>

Testing the programmable oscillator crystal substitutes in the BC-669 receiver. They work great.

Can you spot the two in the receiver?

<https://goo.gl/photos/xrDGXbiWsvxsNja46>

The little 79-cent DC-DC converter, bucking and regulating filament voltage to 5.5V.

I've had no birdie problems.

<https://goo.gl/photos/nbAmVz4EwzikAL1C6>

As soon as the permanent oscillators arrive, this rig is ready for its new home.

73 DE Dave AB5S

From wb0eq at yahoo.com Thu May 19 16:19:28 2016
From: wb0eq at yahoo.com (John Sehring)
Date: Thu, 19 May 2016 20:19:28 +0000 (UTC)
Subject: [BoatAnchors] "Valve" testers
References: <1828711002.5528339.1463689168006.JavaMail.yahoo.ref@mail.yahoo.com>
Message-ID: <1828711002.5528339.1463689168006.JavaMail.yahoo@mail.yahoo.com>

Hi All,

We're lucky enough to have a local radio tube bank run by volunteers. Its motto could be "In Vacuum We Trust"!

It's an enormous job. It is clearly a labor of love.

To keep it manageable, deposits and withdrawals are made only by personal visits to the bank which is typically located in someone's basement. Only retired folks have enough time & energy to do this task. When I was recently visiting with the just-past keeper he joked that he had retired from doing this task because every previous keeper had become deceased! I'm up there in age, too, so we had a good laugh. Hi!

Anyhoo, the tube bank and its volunteers seem to be a magnet for things electronique. So the keepers sometimes find donations of tubes, tube testers, and misc. other electronic equipment on their back porch, like abandoned kittens in a paper bag!

So, one ex-keeper wound up with no less than 18 (count 'em!) tube testers! He offered me my choice of them.

Some of the older TTs from the 1930s have front panels like art deco works of art--they must've impressed the radio repair shop customers of yore.

I went home with a B-K 707, an Eico 667, a Stark 9-66, and just for fun, an emission tester Heathkit IT-17.

=====

1) I already have a B-K 700 which is very similar to the 707. I have not been able to discern the difference between the two---anybody?

These are curious "hybrid" testers. In their "rapid setup section", no switches need to be set (apart from filament voltage). Just find the tube listed next to its socket (34 of them) (or look it up in the book provided) and away you go with

a fast mutual transconductance/shorts/gas/grid- emission test. Also have automatic line voltage stabilization---I don't how effective this---I'll have to variac this TT to find out.

For older & less-used tubes there is a separate, smaller group of sockets for which a setup from a tube chart needs to be made. Important: Only an emission/shorts/gas test is possible here. This group sadly includes "modern" sweep tubes, e.g. 6JB6 as found in Drake transmitters (of which I have a few).

BTW this TT is relative easy to calibrate. It to does not require a "bogey" tube for adjustment as do, say, the (some?, all?) Hickok's.

2) I already have an Eico 666 which claims to be a mutual conductance tube tester. The 667 has more setup switching and so can test more newer tube types (yes, it adds sweeps). I say "claims" to be a conductance tester but it has no vacuum tubes in its circuit, most typically a 5Y3 and an 83. (The Jackson 648 is similar.)

An age old question for me is whether it's necessary for a TT to contain tubed circuits to do any form of dynamic mutual (or just plain mutual) conductance testing. Seems to me that the 5Y3 could be replaced with ss diodes and series resistors to mimic its voltage drop in the circuit. The 83 is a full-wave mercury vapor rectifier with relativeley constant voltage drop (about 15 v). A ss Zener diode with suitable series resistance(s) would seem be an adequate replacement, or?

Heath (in the IT-17 & other models' manuals) does talk briefly about emission, transconductance, and dynamic transconductance testing.

3) The Stark 9-66 is Canadian made. I never noticed one while I lived in the States. They're reputed to be copies to some degree of Hickok's designs. In fact, the 9-66 has almost exactly the same panel layout & controls as the Hickok 532. I suspect Stark did build these under license from Hickok. (Stark also made a version of the TV-7 (the D version) mil-spec tube tester for use by Canadian military.) There's a lot of paperwork & commentary on the 9-66---that's good. I'm unfamiliar with it so a "Getting to Know You" dance will have to take place.

4) Sometimes, I'll just want to know the relative emission of a tube(s) for, say, part of the tube matching process or to look at how a cathode has aged. That's why I picked the Heath IT-17. It is very similar to all of Heath's emission tube testers, TS-2, TS-3, IT-21 It does do sweep tubes. It does not need calibration. Its leakage test sensitivity can be changed by a single resistor alteration.

=====

His wife was also happy I visited, she asked me to take away as much s__t as possible--that is a direct quote.

--John Sehring VE6EQR-WB0EQ nr Calgary, Alberta, Canada

From anchor at ec.rr.com Thu May 19 19:25:59 2016
From: anchor at ec.rr.com (Al Parker)
Date: Thu, 19 May 2016 19:25:59 -0400
Subject: [BoatAnchors] "Valve" testers
In-Reply-To: <1828711002.5528339.1463689168006.JavaMail.yahoo@mail.yahoo.com>
References: <1828711002.5528339.1463689168006.JavaMail.yahoo.ref@mail.yahoo.com>
<1828711002.5528339.1463689168006.JavaMail.yahoo@mail.yahoo.com>
Message-ID: <37e97ac4-42b3-771d-6ce8-a8c959e6fa3e@ec.rr.com>

Hi John,

Alan Douglas, in "Tube Testers & Classic Electronic Test Gear" has a cupla pgs on the B&K's. He says they're all the basic Hickok design, but most have fixed bias settings which makes them not very good at always testing in the proper operating range. Does say the 700 & 707 have calibrating adjustments, tho' at least one of the manuals doesn't give the procedure (he does). I can scan the pgs for you if you'd like.
73,

Al, W8UT
www.boatanchors.org
www.hammarlund.info

"There is nothing -- absolutely nothing -- half so much worth doing as simply messing about in boats"
Ratty, to Mole

On 5/19/2016 4:19 PM, John Sehring via BoatAnchors wrote:
> 1) I already have a B-K 700 which is very similar to the 707. I have not been able to discern the difference between the two---anybody?

From 1oldlens1 at ix.netcom.com Thu May 19 20:42:18 2016
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Thu, 19 May 2016 17:42:18 -0700
Subject: [BoatAnchors] [DrakeRadio] Re: "Valve" testers
In-Reply-To: <37e97ac4-42b3-771d-6ce8-a8c959e6fa3e@ec.rr.com>
References: <1828711002.5528339.1463689168006.JavaMail.yahoo.ref@mail.yahoo.com>
<1828711002.5528339.1463689168006.JavaMail.yahoo@mail.yahoo.com>
<37e97ac4-42b3-771d-6ce8-a8c959e6fa3e@ec.rr.com>
Message-ID: <d5d77439-68cf-171e-1971-05958ffede8d@ix.netcom.com>

I have two tube testers that I use all the time, a Weston Model 981

type-3 and a TV-7D/U Each has certain advantages; the Weston is easier to use but the TV-7 has lots of updates that I don't have for the Weston and will test for gas. I have a couple of other testers in storage. One is an RCA tester that works from punch cards. Very convenient but most of the cards are missing. The cards set the unit up for each tube almost instantly. I think I also have a Heathkit tester but don't know the model or if it still works. I should really dig it out. The Weston and TV-7 give me nearly identical results. Both are dynamic mutual conductance testers but also indicate emission. There are a few laboratory type testers that allow one to vary voltages on calibrated meters and measure the results. They can be used to obtain characteristic curves. Probably the most elaborate is the General Radio vacuum tube bridge, however, it needs auxiliary power supplies.

While some question the utility of tube testers in my experience they are valuable trouble shooting tools providing you understand what they are measuring. (Actually, this is true of any instrument).

From what I can learn from catalogs, etc, Hickok seems to have originated the tube tester of the sort we are familiar with and many other testers, military or kit type, are derived from Hickok designs.

On 5/19/2016 4:25 PM, Al Parker anchor at ec.rr.com [DrakeRadio] wrote:

> Hi John,
> Alan Douglas, in "Tube Testers & Classic Electronic Test Gear" has a
> cupla pgs on the B&K's. He says they're all the basic Hickok design,
> but most have fixed bias settings which makes them not very good at
> always testing in the proper operating range. Does say the 700 & 707
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>> able to discern the difference between the two---anybody?
>

--
Richard Knoppow
1oldlens1 at ix.netcom.com
WB6KBL

From vilgotch at bigpond.net.au Fri May 20 00:07:11 2016
From: vilgotch at bigpond.net.au (Morris Odell)
Date: Fri, 20 May 2016 14:07:11 +1000
Subject: [BoatAnchors] "Valve" testers
In-Reply-To: <d5d77439-68cf-171e-1971-05958ffede8d@ix.netcom.com>
References: <1828711002.5528339.1463689168006.JavaMail.yahoo.ref@mail.yahoo.com>
<1828711002.5528339.1463689168006.JavaMail.yahoo@mail.yahoo.com>
<37e97ac4-42b3-771d-6ce8-a8c959e6fa3e@ec.rr.com>
<d5d77439-68cf-171e-1971-05958ffede8d@ix.netcom.com>
Message-ID: <E713D569352944A7BE78CA271953E915@LGLaptop>

Anchorites,

An interesting discussion. It got me thinking about what valve testers might have originally been used for and their place in the scheme of things nowadays. In the many manuals for high end military and test gear I have read over the years I don't recall seeing much reference to testing tubes other than by substitution. In the early days of radio the tubes were exotic and expensive parts of radios with finite life spans and there was a lot of business had by repair shops in replacing them. Hence the large numbers of tube testers made for that purpose. The professionals and military just replaced them and some of the more exotic types such as 7360s, thyratrons, VR tubes or big power tubes etc couldn't be tested in a conventional tester anyway. I have sometimes wondered what the real role was for the more high end testers or the Tek 570 cure tracer in the vacuum tube era. Maybe it was new tube development, research or acceptance testing for professional inventories.

Having said that I do have an AVO tube tester but usually only use it either for acceptance testing of treasures found at hamfests, or to confirm that a dud really is a dud.

Of course nowadays the audiophoole community is a whole new market for valve testing and matching and the price of high quality valve testers has gone through the roof accordingly but I'm a blasphemous believer in negative feedback and sceptic as to whether it makes a difference to what non-golden ears can hear.

73, Morris

Richard Knoppow wrote:

I have two tube testers that I use all the time, <snip>

From 1oldlens1 at ix.netcom.com Fri May 20 01:25:17 2016
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Thu, 19 May 2016 22:25:17 -0700
Subject: [BoatAnchors] "Valve" testers
In-Reply-To: <E713D569352944A7BE78CA271953E915@LGLaptop>
References: <1828711002.5528339.1463689168006.JavaMail.yahoo.ref@mail.yahoo.com>
<1828711002.5528339.1463689168006.JavaMail.yahoo@mail.yahoo.com>
<37e97ac4-42b3-771d-6ce8-a8c959e6fa3e@ec.rr.com>
<d5d77439-68cf-171e-1971-05958ffede8d@ix.netcom.com>
<E713D569352944A7BE78CA271953E915@LGLaptop>
Message-ID: <fbf7f911-9106-63b1-0b43-30c3f084bbbf@ix.netcom.com>

Tube testers were actually pretty common service instruments. See old magazines aimed at radio and TV service shops. Also many stores that sold radio tubes, including drugstores, had counter top testers: people could bring in tubes from their radios and TVs and test them. If they tested bad there was a cabinet of tubes for sale.

Commonly used tubes were not expensive, again see the old catalogs on the web, some less than a dollar, maybe ten dollars in today's money.

I worked for Hewlett-Packard years ago when we still serviced many vacuum tube instruments. We had a tester in our shop and I tested nearly ever tube in equipment that came in to catch the weak ones. Testers need to be used with some understanding. Especially in RF circuits tubes that test good may not always work but mostly the tester gives you a pretty good idea of which are good and which are not.

On 5/19/2016 9:07 PM, Morris Odell via BoatAnchors wrote:

> Anchorites,
>
> An interesting discussion. It got me thinking about what valve testers
> might have originally been used for and their place in the scheme of
> things nowadays. In the many manuals for high end military and test
> gear I have read over the years I don't recall seeing much reference
> to testing tubes other than by substitution. In the early days of
> radio the tubes were exotic and expensive parts of radios with finite
> life spans and there was a lot of business had by repair shops in
> replacing them. Hence the large numbers of tube testers made for that
> purpose. The professionals and military just replaced them and some of
> the more exotic types such as 7360s, thyratrons, VR tubes or big power
> tubes etc couldn't be tested in a conventional tester anyway. I have
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> was new tube development, research or acceptance testing for
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>
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> valve testing and matching and the price of high quality valve testers
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> 73, Morris
>
> Richard Knoppow wrote:
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> I have two tube testers that I use all the time, <snip>
>
> -----
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> <https://minime.theporch.com/mailman/listinfo/boatanchors>
>

--
Richard Knoppow
1oldlens1 at ix.netcom.com
WB6KBL

From navy.radio at gmail.com Sun May 22 19:23:41 2016
From: navy.radio at gmail.com (Nick England)
Date: Sun, 22 May 2016 19:23:41 -0400
Subject: [BoatAnchors] Dayton hamfest photos
Message-ID: <CAB55hNeilQsZLocVW_GpyyYhBwjE4sPRBZHX+H910UoaP01mRQ@mail.gmail.com>

There were lots of boatanchors at Dayton - I took lots of photos.
For your viewing pleasure -
<http://www.virhistory.com/ham/dayton-16.htm>

Cheers,
Nick England K4NYW
www.navy-radio.com

From navy.radio at gmail.com Sun May 22 19:24:02 2016
From: navy.radio at gmail.com (Nick England)
Date: Sun, 22 May 2016 19:24:02 -0400
Subject: [BoatAnchors] Dayton hamfest photos
Message-ID: <CAB55hNd0600Gxxt_jF_+EbGvx_4CdM7506pepd9Ljkn2FZQ4sA@mail.gmail.com>

There were lots of boatanchors at Dayton - I took lots of photos.
For your viewing pleasure -
<http://www.virhistory.com/ham/dayton-16.htm>

Cheers,
Nick England K4NYW
www.navy-radio.com

From nf6x at nf6x.net Sun May 22 20:12:41 2016
From: nf6x at nf6x.net (Mark J. Blair)
Date: Sun, 22 May 2016 17:12:41 -0700
Subject: [BoatAnchors] Ribbon+Capstan Variable Inductor Wanted
Message-ID: <CCC4AD79-B377-4191-B125-7C8684252894@nf6x.net>

I wonder if anybody has an extra ribbon + capstan type variable inductor sitting about, of the style used in gear like the T-195 transmitter and Collins 180L-3A tuner. An example can be seen in the second picture on this page:

<http://g3ynh.info/atu/collins180L.html>

I'd like to experiment with one of these, but I don't want to disassemble my T-195 to do it.

I'm posting my request on a few mailing lists, so I apologize for bothering anybody seeing this multiple times.

--
Mark J. Blair, NF6X <nf6x at nf6x.net>
<http://www.nf6x.net/>

From beckrep at powerc.net Tue May 24 21:22:33 2016
From: beckrep at powerc.net (Paul Beckwith)
Date: Tue, 24 May 2016 18:22:33 -0700
Subject: [BoatAnchors] Dayton hamfest photos
Message-ID: <mailman.745.1464217558.226.boatanchors@theporch.com>

There were lots of boatanchors at Dayton - I took lots of photos.
For your viewing pleasure -
<http://www.virhistory.com/ham/dayton-16.htm>

Cheers,
Nick England K4NYW
www.navy-radio.com

BoatAnchors mailing list
BoatAnchors at theporch.com
<https://minime.theporch.com/mailman/listinfo/boatanchors>

From radiokk1k at gmail.com Thu May 26 16:55:48 2016
From: radiokk1k at gmail.com (Dean Gagnon)
Date: Thu, 26 May 2016 16:55:48 -0400
Subject: [BoatAnchors] R392 part
Message-ID: <02FB9686-3971-4444-B653-294F5FF79BF5@gmail.com>

Looking for the coupling used on the R392 Bandwidth control shaft. Please advise if you have an available part. KK1K via QRZ

Sent from my iPad

From wlfuqu00 at uky.edu Fri May 27 15:49:25 2016
From: wlfuqu00 at uky.edu (Fuqua, Bill L)
Date: Fri, 27 May 2016 19:49:25 +0000
Subject: [BoatAnchors] Phasitron Transmitter
Message-ID: <B7E8B5B4A202074084E2515A7B10A7F34F3CC3FD@ex10mb02.ad.uky.edu>

I am trying to get in touch with Steve Himphill, I sold him a Phasitron transmitter years ago which he restored and have some interesting historical information about it.

I had rescued it from the University of Kentucky's surplus auction for \$1 other wise if I had not been there it would have gone for scrap. I could not understand UK which is in Lexington had a transmitter from Louisville. Ends up it was from WBKY which was moved to Lexington and became University of Kentucky's campus station.

Steve, if you see this email me.

73
Bill wa4lav

From wlfuqu00 at uky.edu Fri May 27 16:08:21 2016
From: wlfuqu00 at uky.edu (Fuqua, Bill L)
Date: Fri, 27 May 2016 20:08:21 +0000
Subject: [BoatAnchors] Phasitron Transmitter
In-Reply-To: <B7E8B5B4A202074084E2515A7B10A7F34F3CC3FD@ex10mb02.ad.uky.edu>
References: <B7E8B5B4A202074084E2515A7B10A7F34F3CC3FD@ex10mb02.ad.uky.edu>
Message-ID: <B7E8B5B4A202074084E2515A7B10A7F34F3CC413@ex10mb02.ad.uky.edu>

My memory is kicking in a bit now. It is not clear if it was ever used by WBKY. I now remember it had a label on it with WHAS call sign. Perhaps it was donated to UK for their use but thinking about it, it may have

never been used by the UK campus station. I am hoping that Steve can help me with this. I am putting together some info for our club's news letter regarding WBKY. Two engineers, owners of Engineered Devices Company, as college students were involved with the station, one, an electrical engineering student, had acquired two used towers and sold one of them to WBKY, his friend, the mechanical engineering student erected it and installed the coax and antenna. And as a masters thesis the EE did field strength measurements using a old Ford pickup with a telescoping tower attached to it.

73

Bill wa4lav

From: Fuqua, Bill L
Sent: Friday, May 27, 2016 3:49 PM
To: boatanchors at theporch.com
Subject: Phasitron Transmitter

I am trying to get in touch with Steve Himphill, I sold him a Phasitron transmitter years ago which he restored and have some interesting historical information about it. I had rescued it from the University of Kentucky's surplus auction for \$1 other wise if I had not been there it would have gone for scrap. I could not understand UK which is in Lexington had a transmitter from Louisville. Ends up it was from WBKY which was moved to Lexington and became University of Kentucky's campus station.

Steve, if you see this email me.

73

Bill wa4lav

From 1oldlens1 at ix.netcom.com Fri May 27 16:31:31 2016
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Fri, 27 May 2016 13:31:31 -0700
Subject: [BoatAnchors] Phasitron Transmitter
In-Reply-To: <B7E8B5B4A202074084E2515A7B10A7F34F3CC413@ex10mb02.ad.uky.edu>
References: <B7E8B5B4A202074084E2515A7B10A7F34F3CC3FD@ex10mb02.ad.uky.edu>
<B7E8B5B4A202074084E2515A7B10A7F34F3CC413@ex10mb02.ad.uky.edu>
Message-ID: <940fdb6-27f2-0205-fa73-59bef837e8d8@ix.netcom.com>

Brings back memories. I did some volunteer work for KPFK, a non-commercial FM station locally. They had a Phasitron. I think another station also had one. It was operating as KCBH when I visited there, originally KMGM and later KJOI. I am sure both TX were long ago scrapped.

You may be aware that WHAS AM had the first Western Electric Doherty transmitter.

On 5/27/2016 1:08 PM, Fuqua, Bill L via BoatAnchors wrote:

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> as college students were involved with the station, one, an electrical engineering student, had acquired two used towers and sold one of them to WBKY, his friend, the mechanical
> engineering student erected it and installed the coax and antenna. And as a masters thesis the EE did field strength measurements using a old Ford pickup with a telescoping tower
> attached to it.

>

> 73

> Bill wa4lav

>

> -----

> From: Fuqua, Bill L

> Sent: Friday, May 27, 2016 3:49 PM

> To: boatanchors at theporch.com

> Subject: Phasitron Transmitter

>

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>

> -----

> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

>

--

Richard Knoppow

1oldlens1 at ix.netcom.com

WB6KBL

From 1oldlens1 at ix.netcom.com Fri May 27 16:35:44 2016
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Fri, 27 May 2016 13:35:44 -0700
Subject: [BoatAnchors] Phasitron Transmitter
In-Reply-To: <B7E8B5B4A202074084E2515A7B10A7F34F3CC413@ex10mb02.ad.uky.edu>
References: <B7E8B5B4A202074084E2515A7B10A7F34F3CC3FD@ex10mb02.ad.uky.edu>
<B7E8B5B4A202074084E2515A7B10A7F34F3CC413@ex10mb02.ad.uky.edu>
Message-ID: <983776c5-d9a0-1433-174c-df8436a8e6f1@ix.netcom.com>

Oh, dear, confusion in my memory. The KPFK transmitter was an REL Serrisoid. It was General Electric that used the Phasitron. The old KMGH/KCBH was also an REL Serrisoid. Well, it was fifty years ago. I am pretty sure there must have been a couple of GE FM transmitters locally.

On 5/27/2016 1:08 PM, Fuqua, Bill L via BoatAnchors wrote:

> My memory is kicking in a bit now. It is not clear if it was ever used by WBKY. I now remember it had a label on it with WHAS call sign.
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>

> 73

> Bill wa4lav

>

> -----

> From: Fuqua, Bill L
> Sent: Friday, May 27, 2016 3:49 PM
> To: boatanchors at theporch.com
> Subject: Phasitron Transmitter

>

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>

> -----
> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

>

--

Richard Knoppow

1oldlens1 at ix.netcom.com

WB6KBL

From w5sum at comcast.net Fri May 27 17:44:09 2016

From: w5sum at comcast.net (w5sum at comcast.net)

Date: Fri, 27 May 2016 16:44:09 -0500

Subject: [BoatAnchors] Bud FCC-90 Crystal Calibrator

In-Reply-To: <983776c5-d9a0-1433-174c-df8436a8e6f1@ix.netcom.com>

References: <B7E8B5B4A202074084E2515A7B10A7F34F3CC3FD@ex10mb02.ad.uky.edu>

<B7E8B5B4A202074084E2515A7B10A7F34F3CC413@ex10mb02.ad.uky.edu>

<983776c5-d9a0-1433-174c-df8436a8e6f1@ix.netcom.com>

Message-ID: <90F9AEE91D60449F86402C5DFCD8F1F9@MININTMC1HLDC>

Howdy Men

I have come into a very nice Bud FCC-90 Crystal Calibrator. I need a schematic for it.

browsing the web I see a FCC-90A and a FCC-90B, but they are different.

This one has a 117L7 tube in it as a rectifier and a oscillator. THAT is the one I'm searching for.

Does anyone have any information on this little Gem?

Thanks and God bless

73 Ronnie W5SUM

From arc5 at ix.netcom.com Fri May 27 23:05:37 2016

From: arc5 at ix.netcom.com (David Stinson)

Date: Fri, 27 May 2016 22:05:37 -0500
Subject: [BoatAnchors] Memphis Bell Radio Op Passes Into History
Message-ID: <4CDA43D3117B488386BEC052EA4EE401@DaddyPC>

God bless you, good sir.

<http://www.foxnews.com/us/2016/05/27/memphis-belle-gunner-revisits-england-dies-during-final-mission.html?intcmp=hplnws>

From arc5 at ix.netcom.com Sat May 28 10:25:13 2016
From: arc5 at ix.netcom.com (David Stinson)
Date: Sat, 28 May 2016 09:25:13 -0500
Subject: [BoatAnchors] SIMPLE Carbon Microphone Substitute.
Message-ID: <8DE52F8C37E84C4191138CB1E9E6B6E9@DaddyPC>

Been working on a simple substitute for the Carbon microphone used with the BC-669. I've seen some multi-IC, 3-dozen-part designs which hugely violate The Law of Pernicious Parts Count:

"Every part in a project beyond about eight reduces the number of people who will build it by 50%."

So no one builds them. I hope this one will get tried and improved:

<https://goo.gl/photos/26HUmzVuqhZKWrNZ7>

Cobbled it together and it works well with the BC-669. I picked that transistor because it was the first one I grabbed from the "NPN Small Signal" drawer and my Android phone called it "General Purpose." Other common NPNs will likely work as well. The electret element isn't marked +/- . I soldered it in one way and it didn't work. Turned it around and it did. Will try it on other rigs as the weekend goes on.

73 DE Dave AB5S

From k4pf at jun0.com Sun May 29 13:45:07 2016
From: k4pf at jun0.com (k4pf at jun0.com)
Date: Sun, 29 May 2016 17:45:07 GMT
Subject: [BoatAnchors] Collins KWM-1 listed on eBay has an interesting story
Message-ID: <20160529.134507.17127.0@webmail51.vgs.unttd.com>

Hi, Gang

While browsing on eBay, I came across this listing:

http://www.ebay.com/itm/Collins-Radio-KWM-1-Possibly-Used-in-U-2-Spy-Aircraft-Cold-War-Relic/231946456019?_trksid=p2046732.c100040.m2060&_trkparms=aid%3D111001%26algo%3DREC.SEED%26ao%3D1%26asc%3D20140107095009%26meid%3Df1dcfae652ee4d53a0c43170c501d61b%26pid%3D100040%26rk%3D4%26rkt%3D4%26sd%3D182149774079

It may have been used on a U-2 spy aircraft, per the seller.
Anyway, interesting photos of a non-stock KWM-1.

73,
Ed Knobloch

From arc5 at ix.netcom.com Mon May 30 18:21:01 2016
From: arc5 at ix.netcom.com (David Stinson)
Date: Mon, 30 May 2016 17:21:01 -0500
Subject: [BoatAnchors] SIMPLE Carbon Microphone Substitute.
Message-ID: <5FC1447B519E40A3A0D63B0F5437D938@DaddyPC>

(By request- catch-up on this thread)

Been working on a simple substitute for the Carbon
microphone used with the BC-669....

I hope this one will get tried and improved:

<https://goo.gl/photos/26HUmzVuqhZKWrNZ7>

Cobbled it together and it works well with the BC-669.
I picked that transistor because it was the first one
I grabbed from the "NPN Small Signal" drawer and
my Android phone called it "General Purpose."
Common NPNs with a Beta over 100 seem to
work best.
The electret element isn't mark +/- . I soldered it in
one way and it didn't work. Turned it around and it did.

Several other elements I've tried on the 669 measure low
values (under 200 Ohms) and none of them will modulate
the rig beyond about 20%. And they sound bad.
I decided to make the carbon element subber so I could
use a "candle stick" mic I have that, no matter what I did

including installing a NOS element, pounding it, heating it, praying etc. would not fully modulate any of my rigs and sounded like doggie doo anyway. The candle-stick mic will look awesome with the rig if I ever do another display somewhere.

I did try the little subber with bypassed emitter bias and the large base-to-ground resistor you'd expect. It resulted in about half the output and no change in audio quality.

The 2N3569 has a lower Beta.

Beta above about 100 works better.

I have another N-1, a T-1 and other various elements. All read 60-300 Ohms. None will modulate any of the rigs properly. The best of this lot is the large K1 transmitter element in the "candle stick" microphone. It measures 2K Ohms and will mod the rigs about half way if you yell.

A dim light came on in what passes for my brain.

Take another look at the electret carbon mic replacement circuit:

<https://goo.gl/photos/26HUmzVuqhZKWrNZ7>

This puts out nice-sounding audio and will modulate the rigs fully, but you got to close-talk it. I haven't tried another electret- looking for a higher-gain transistor first. 2N2222 is a little better.

The circuit.... and a 2K carbon element...hmmm.

So I did this:

<https://goo.gl/photos/6Ua2hJmLdSrkiGw57>

And "Ala-Kazam!" I got excellent-sounding, 100% modulation from a normal voice using this very cool "candle-stick" mike.

Fortunately, the element in this mike is isolated from ground.

And one less part, so

"The Law of Pernicious Parts Count" is being respected.

Put a little board right on the back of the element and away we go.

<https://goo.gl/photos/Ce4RQuJGBY3WciBK9>

Just to be thorough, I did try the Lo-Z elements

(Hey... $Z=X+R$, even when X is zero).
and they did not work, as we would expect since
they don't bias the transistor properly
and if you put them in series with a resistor,
they aren't a big-enough fraction of the total
 Z to matter.
I'm thinking of a proper bias divider and
putting the Lo- Z elements in the Emitter lead.

The Latest, 30 May 16

I did get around to working with a "Lo- Z "
near-dead N-1 carbon mike element.
Ohmmeter says about 225 Ohms.
No amount of bashing, baking or bouncing off walls
will get this element to modulate any of my many WWII
milradio sets beyond about 20% at best.

So I scratched my head and did this:

<https://goo.gl/photos/JX9WcN3PdMosA2De9>

And it works! In fact, it will over-modulate the 669
if I close-talk it. Built it on a little board, mounted
it on the back of the N-1 element and into the old
T-17 case it goes.

<https://goo.gl/photos/Cy7HLn6KWFikyZr77>

The transistor- Remember way back in the 70s
when mail-order surplus houses used to sell sacks
of 100 "unmarked" or house-marked transistors?
Well I've had some all these eons. I used a
Sencore TS139 Beta tester to pick a couple
with betas over 100 (the 2N3569 and 2N2222 are
about 60 and 70 on the test set). So I don't know
what transistor this is, but there are lots of smart people
here who can suggest a good general-purpose NPN
with a 100+ Beta that will do V_{cc} of 40 or 60 at a
few mils. There are likely dozens of them.

This is fun.

73 DE Dave AB5S